

Food for irradiation	Limitations	Use
Bagged complete diets, packaged feeds, feed ingredients, bulk feeds, animal treats and chews.	Absorbed dose: Not to exceed 50 kiloGrays. Feeds and feed ingredients treated by irradiation should be formulated to account for nutritional loss.	Microbial disinfection, control or elimination

(2) If an irradiated feed ingredient is less than 5 percent of the final product, the final product can be irradiated without being considered to be re-irradiated.

[51 FR 5993, Feb 19, 1986; 51 FR 8315, Mar. 11, 1986, as amended at 58 FR 18148, Apr. 8, 1993; 66 FR 18540, Apr. 10, 2001]

§ 579.40 Ionizing radiation for the treatment of poultry feed and poultry feed ingredients.

Ionizing radiation for the treatment of complete poultry diets and poultry feed ingredients may be safely used as follows:

(a) *Energy sources.* Ionizing radiation is limited to gamma rays from sealed units of cobalt-60.

(b) *Limitation.* The ionizing radiation is used for feed or feed ingredients that do not contain drugs.

(c) *Use.* Ionizing radiation is used as a single treatment for rendering complete poultry diets or poultry feed ingredients salmonella negative as follows:

(1) Minimum dose 2.0 kiloGrays (kGy) (0.2 megarad (Mrad)); maximum dose 25 kGy (2.5 megarads Mrad). The absorbed dose of irradiation is to be based on initial concentration of salmonella using the relationship that 1.0 kGy (0.1 Mrad) reduces salmonella concentration by one log cycle (one decimal reduction).

(2) Feeds treated by irradiation should be formulated to account for nutritional loss.

(3) If an irradiated feed ingredient is less than 5 percent of the final product, the final product can be irradiated without being considered to be re-irradiated.

[60 FR 50099, Sept. 28, 1995]

PART 582—SUBSTANCES GENERALLY RECOGNIZED AS SAFE

Subpart A—General Provisions

Sec.

582.1 Substances that are generally recognized as safe.

582.10 Spices and other natural seasonings and flavorings.

582.20 Essential oils, oleoresins (solvent-free), and natural extractives (including distillates).

582.30 Natural substances used in conjunction with spices and other natural seasonings and flavorings.

582.40 Natural extractives (solvent-free) used in conjunction with spices, seasonings, and flavorings.

582.50 Certain other spices, seasonings, essential oils, oleoresins, and natural extracts.

582.60 Synthetic flavoring substances and adjuvants.

582.80 Trace minerals added to animal feeds.

582.99 Adjuvants for pesticide chemicals.

Subpart B—General Purpose Food Additives

582.1005 Acetic acid.

582.1009 Adipic acid.

582.1033 Citric acid.

582.1057 Hydrochloric acid.

582.1061 Lactic acid.

582.1069 Malic acid.

582.1073 Phosphoric acid.

582.1077 Potassium acid tartrate.

582.1087 Sodium acid pyrophosphate.

582.1091 Succinic acid.

582.1095 Sulfuric acid.

582.1099 Tartaric acid.

582.1125 Aluminum sulfate.

582.1127 Aluminum ammonium sulfate.

582.1129 Aluminum potassium sulfate.

582.1131 Aluminum sodium sulfate.

582.1135 Ammonium bicarbonate.

582.1137 Ammonium carbonate.

582.1139 Ammonium hydroxide.

582.1141 Ammonium phosphate.

582.1143 Ammonium sulfate.

582.1155 Bentonite.

582.1165 Butane.

582.1191 Calcium carbonate.

582.1193 Calcium chloride.

582.1195 Calcium citrate.

582.1199 Calcium gluconate.

582.1205 Calcium hydroxide.

582.1207 Calcium lactate.

582.1210 Calcium oxide.

582.1217 Calcium phosphate.

582.1235 Caramel.

582.1240 Carbon dioxide.

582.1275 Dextrins.

582.1320 Glycerin.

582.1324 Glyceryl monostearate.

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582.1355 Helium.
 582.1366 Hydrogen peroxide.
 582.1400 Lecithin.
 582.1425 Magnesium carbonate.
 582.1428 Magnesium hydroxide.
 582.1431 Magnesium oxide.
 582.1480 Methylcellulose.
 582.1500 Monoammonium glutamate.
 582.1516 Monopotassium glutamate.
 582.1540 Nitrogen.
 582.1585 Papain.
 582.1613 Potassium bicarbonate.
 582.1619 Potassium carbonate.
 582.1625 Potassium citrate.
 582.1631 Potassium hydroxide.
 582.1643 Potassium sulfate.
 582.1655 Propane.
 582.1666 Propylene glycol.
 582.1685 Rennet.
 582.1711 Silica aerogel.
 582.1721 Sodium acetate.
 582.1736 Sodium bicarbonate.
 582.1742 Sodium carbonate.
 582.1745 Sodium carboxymethylcellulose.
 582.1748 Sodium caseinate.
 582.1751 Sodium citrate.
 582.1763 Sodium hydroxide.
 582.1775 Sodium pectinate.
 582.1778 Sodium phosphate.
 582.1781 Sodium aluminum phosphate.
 582.1792 Sodium sesquicarbonate.
 582.1804 Sodium potassium tartrate.
 582.1810 Sodium tripolyphosphate.
 582.1901 Triacetin.
 582.1973 Beeswax.
 582.1975 Bleached beeswax.
 582.1978 Carnauba wax.

Subpart C—Anticaking Agents

582.2122 Aluminum calcium silicate.
 582.2227 Calcium silicate.
 582.2437 Magnesium silicate.
 582.2727 Sodium aluminosilicate.
 582.2729 Hydrated sodium calcium aluminosilicate.
 582.2906 Tricalcium silicate.

Subpart D—Chemical Preservatives

582.3013 Ascorbic acid.
 582.3021 Benzoic acid.
 582.3041 Erythorbic acid.
 582.3081 Propionic acid.
 582.3089 Sorbic acid.
 582.3109 Thiodipropionic acid.
 582.3149 Ascorbyl palmitate.
 582.3169 Butylated hydroxyanisole.
 582.3173 Butylated hydroxytoluene.
 582.3189 Calcium ascorbate.
 582.3221 Calcium propionate.
 582.3225 Calcium sorbate.
 582.3280 Dilauryl thiodipropionate.
 582.3336 Gum guaiac.
 582.3490 Methylparaben.
 582.3616 Potassium bisulfite.
 582.3637 Potassium metabisulfite.

582.3640 Potassium sorbate.
 582.3660 Propyl gallate.
 582.3670 Propylparaben.
 582.3731 Sodium ascorbate.
 582.3733 Sodium benzoate.
 582.3739 Sodium bisulfite.
 582.3766 Sodium metabisulfite.
 582.3784 Sodium propionate.
 582.3795 Sodium sorbate.
 582.3798 Sodium sulfite.
 582.3845 Stannous chloride.
 582.3862 Sulfur dioxide.
 582.3890 Tocopherols.

Subpart E—Emulsifying Agents

582.4101 Diacetyl tartaric acid esters of mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.
 582.4505 Mono- and diglycerides of edible fats or oils, or edible fat-forming acids.
 582.4521 Monosodium phosphate derivatives of mono- and diglycerides of edible fats or oils, or edible fat-forming fatty acids.
 582.4666 Propylene glycol.

Subpart F—Nutrients and/or Dietary Supplements

582.5013 Ascorbic acid.
 582.5017 Aspartic acid.
 582.5049 Aminoacetic acid.
 582.5065 Linoleic acid.
 582.5118 Alanine.
 582.5145 Arginine.
 582.5159 Biotin.
 582.5191 Calcium carbonate.
 582.5195 Calcium citrate.
 582.5201 Calcium glycerophosphate.
 582.5210 Calcium oxide.
 582.5212 Calcium pantothenate.
 582.5217 Calcium phosphate.
 582.5223 Calcium pyrophosphate.
 582.5230 Calcium sulfate.
 582.5245 Carotene.
 582.5250 Choline bitartrate.
 582.5252 Choline chloride.
 582.5260 Copper gluconate.
 582.5271 Cysteine.
 582.5273 Cystine.
 582.5301 Ferric phosphate.
 582.5304 Ferric pyrophosphate.
 582.5306 Ferric sodium pyrophosphate.
 582.5308 Ferrous gluconate.
 582.5311 Ferrous lactate.
 582.5315 Ferrous sulfate.
 582.5361 Histidine.
 582.5370 Inositol.
 582.5375 Iron reduced.
 582.5381 Isoleucine.
 582.5406 Leucine.
 582.5411 Lysine.
 582.5431 Magnesium oxide.
 582.5434 Magnesium phosphate.
 582.5443 Magnesium sulfate.
 582.5446 Manganese chloride.
 582.5449 Manganese citrate.

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582.5452 Manganese gluconate.
582.5455 Manganese glycerophosphate.
582.5458 Manganese hypophosphite.
582.5461 Manganese sulfate.
582.5464 Manganous oxide.
582.5470 Mannitol.
582.5475 Methionine.
582.5477 Methionine hydroxy analog and its calcium salts.
582.5530 Niacin.
582.5535 Niacinamide.
582.5580 D-Pantothenyl alcohol.
582.5590 Phenylalanine.
582.5622 Potassium chloride.
582.5628 Potassium glycerophosphate.
582.5634 Potassium iodide.
582.5650 Proline.
582.5676 Pyridoxine hydrochloride.
582.5695 Riboflavin.
582.5697 Riboflavin-5-phosphate.
582.5701 Serine.
582.5772 Sodium pantothenate.
582.5778 Sodium phosphate.
582.5835 Sorbitol.
582.5875 Thiamine hydrochloride.
582.5878 Thiamine mononitrate.
582.5881 Threonine.
582.5890 Tocopherols.
582.5892 α -Tocopherol acetate.
582.5915 Tryptophane.
582.5920 Tyrosine.
582.5925 Valine.
582.5930 Vitamin A.
582.5933 Vitamin A acetate.
582.5936 Vitamin A palmitate.
582.5945 Vitamin B₁₂.
582.5950 Vitamin D₂.
582.5953 Vitamin D₃.
582.5985 Zinc chloride.
582.5988 Zinc gluconate.
582.5991 Zinc oxide.
582.5994 Zinc stearate.
582.5997 Zinc sulfate.

Subpart G—Sequestrants

582.6033 Citric acid.
582.6085 Sodium acid phosphate.
582.6099 Tartaric acid.
582.6185 Calcium acetate.
582.6193 Calcium chloride.
582.6195 Calcium citrate.
582.6197 Calcium diacetate.
582.6199 Calcium gluconate.
582.6203 Calcium hexametaphosphate.
582.6215 Monobasic calcium phosphate.
582.6219 Calcium phytate.
582.6285 Dipotassium phosphate.
582.6290 Disodium phosphate.
582.6386 Isopropyl citrate.
582.6511 Monoisopropyl citrate.
582.6625 Potassium citrate.
582.6751 Sodium citrate.
582.6754 Sodium diacetate.
582.6757 Sodium gluconate.
582.6760 Sodium hexametaphosphate.
582.6769 Sodium metaphosphate.

582.6778 Sodium phosphate.
582.6787 Sodium pyrophosphate.
582.6789 Tetra sodium pyrophosphate.
582.6801 Sodium tartrate.
582.6804 Sodium potassium tartrate.
582.6807 Sodium thiosulfate.
582.6810 Sodium tripolyphosphate.
582.6851 Stearyl citrate.

Subpart H—Stabilizers

582.7115 Agar-agar.
582.7133 Ammonium alginate.
582.7187 Calcium alginate.
582.7255 Chondrus extract.
582.7330 Gum arabic.
582.7333 Gum ghatti.
582.7339 Guar gum.
582.7343 Locust bean gum.
582.7349 Sterculia gum.
582.7351 Gum tragacanth.
582.7610 Potassium alginate.
582.7724 Sodium alginate.

AUTHORITY: 21 U.S.C. 321, 342, 348, 371.

SOURCE: 41 FR 38657, Sept. 10, 1976, unless otherwise noted.

Subpart A—General Provisions

§ 582.1 Substances that are generally recognized as safe.

(a) It is impracticable to list all substances that are generally recognized as safe for their intended use. However, by way of illustration, the Commissioner regards such common food ingredients as salt, pepper, sugar, vinegar, baking powder, and monosodium glutamate as safe for their intended use. The lists in subparts B through H of this part include additional substances that, when used for the purposes indicated, in accordance with good manufacturing or feeding practice, are regarded by the Commissioner as generally recognized as safe for such uses.

(b) For the purposes of this section, good manufacturing or feeding practice shall be defined to include the following restrictions:

(1) The quantity of a substance added to animal food does not exceed the amount reasonably required to accomplish its intended physical, nutritional, or other technical effect in food; and

(2) The quantity of a substance that becomes a component of animal food as a result of its use in the manufacturing, processing, or packaging of

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food, and which is not intended to accomplish any physical or other technical effect in the food itself, shall be reduced to the extent reasonably possible.

(3) The substance is of appropriate grade and is prepared and handled as a food ingredient. Upon request the Commissioner will offer an opinion, based on specifications and intended use, as to whether or not a particular grade or lot of the substance is of suitable purity for use in food and would generally be regarded as safe for the purpose intended, by experts qualified to evaluate its safety.

(c) The inclusion of substances in the list of nutrients does not constitute a finding on the part of the Department that the substance is useful as a supplement to the diet for animals.

(d) Substances that are generally recognized as safe for their intended use within the meaning of section 409 of the Act are listed in subparts B through H of this part. When the status

of a substance has been reevaluated and affirmed as GRAS or deleted from subparts B through H of this part, an appropriate explanation will be noted, e.g., “affirmed as GRAS,” “food additive regulation,” “interim food additive regulation,” or “prohibited from use in food,” with a reference to the appropriate new regulation. Such notation will apply only to the specific use covered by the review, e.g., direct animal food use and/or indirect animal food use and/or animal feed use and will not affect its status for other uses not specified in the referenced regulation, pending a specific review of such other uses.

§ 582.10 Spices and other natural seasonings and flavorings.

Spices and other natural seasonings and flavorings that are generally recognized as safe for their intended use, within the meaning of section 409 of the act, are as follows:

Common name	Botanical name of plant source
Alfalfa herb and seed	<i>Medicago sativa</i> L.
Allspice	<i>Pimenta officinalis</i> Lindl.
Ambrette seed	<i>Hibiscus abelmoschus</i> L.
Angelica	<i>Angelica archangelica</i> L. or other spp. of <i>Angelica</i> .
Angelica root	Do.
Angelica seed	Do.
Angostura (cusparia bark)	<i>Galipea officinalis</i> Hancock.
Anise	<i>Pimpinella anisum</i> L.
Anise, star	<i>Illicium verum</i> Hook. f.
Balm (lemon balm)	<i>Melissa officinalis</i> L.
Basil, bush	<i>Ocimum minimum</i> L.
Basil, sweet	<i>Ocimum basilicum</i> L.
Bay	<i>Laurus nobilis</i> L.
Calendula	<i>Calendula officinalis</i> L.
Camomile (chamomile), English or Roman	<i>Anthemis nobilis</i> L.
Camomile (chamomile), German or Hungarian	<i>Matricaria chamomilla</i> L.
Capers	<i>Capparis spinosa</i> L.
Capsicum	<i>Capsicum frutescens</i> L. or <i>Capsicum annuum</i> L.
Caraway	<i>Carum carvi</i> L.
Caraway, black (black cumin)	<i>Nigella sativa</i> L.
Cardamom (cardamon)	<i>Elettaria cardamomum</i> Maton.
Cassia, Chinese	<i>Cinnamomum cassia</i> Blume.
Cassia, Padang or Batavia	<i>Cinnamomum burmanni</i> Blume.
Cassia, Saigon	<i>Cinnamomum loureirii</i> Nees.
Cayenne pepper	<i>Capsicum frutescens</i> L. or <i>Capsicum annuum</i> L.
Celery seed	<i>Apium graveolens</i> L.
Chervil	<i>Anthriscus cerefolium</i> (L.) Hoffm.
Chives	<i>Allium schoenoprasum</i> L.
Cinnamon, Ceylon	<i>Cinnamomum zeylanicum</i> Nees.
Cinnamon, Chinese	<i>Cinnamomum cassia</i> Blume.
Cinnamon, Saigon	<i>Cinnamomum loureirii</i> Nees.
Clary (clary sage)	<i>Salvia sclarea</i> L.
Clover	<i>Trifolium</i> spp.
Cloves	<i>Eugenia caryophyllata</i> Thunb.
Coriander	<i>Coriandrum sativum</i> L.
Cumin (cummin)	<i>Cuminum cyminum</i> L.
Cumin, black (black caraway)	<i>Nigella sativa</i> L.
Dill	<i>Anethum graveolens</i> L.
Elder flowers	<i>Sambucus canadensis</i> L.
Fennel, common	<i>Foeniculum vulgare</i> Mill.